96. $\int \frac{x+3}{x+2} dx =$

1. $\ln 2 + k$
2. $x + \ln|x+1| + k$
3. $x + \ln|x+2| + k$
4. $\ln|x+1| + k$
5. $\ln|x+2| + k$

(B.–98)

97. $\int_0^{\pi} \sqrt{\pi^2 - x^2}\, dx =$

1. πr^2 2. $3/4\pi r^2$ 3. $\pi/4 r^2$ 4. $2/3\pi r^2$ 5. πr (M. 98)

98. $\int_{\sqrt{3}}^{3} \frac{x\, dx}{\sqrt{x^2-1}} =$

1. $2-\sqrt{3}$ 2. $\sqrt{3}-1$ 3. $\sqrt{2}-1$ 4. $2\sqrt{2}-1$ 5. $2(\sqrt{2}-1)$ (M.–98)

99. $\int_0^{1} \frac{x^3+1}{x+2} dx =$ (M. 98)

1. $10/3 + \ln 2/3$ 2. $10/3 + 7 \ln 2/3$ 3. $10/3$ 4. $\ln 2/3$ 5. $10/3 - \ln 2/3$

100. $\int_0^{1} \sqrt{1-x^2}\, dx =$

1. $\frac{1+\cos 2x}{2}$ 2. $\frac{x}{2} + \frac{1}{4}\sin 2x$ 3. 0 4. $\frac{3\pi}{2}$ 5. $\frac{\pi}{4}$ (M. 98)

101. $\int \sin^2 x\, dx =$

1. $\frac{x \sin x \cos x}{2} + c$
2. $x + \sin x \cos x + c$
3. $-\cos^2 x + c$
4. $\cos^2 x + c$
5. $\frac{x - \sin x \cos x}{2}$

(M.–97)

102. $\int e^x \cos x\, dx =$

1. $\frac{1}{2}(\sin x + \cos x) + c$
2. $\frac{e^x}{2}(\sin x + \cos x) + c$
3. $\frac{e^x}{2}\sin x + \cos x + c$
4. $\sin x + \cos x + c$
5. $\frac{e^x}{2}(\sin x - \cos x) + c$

(B.–97)

103. $\int \cos 3x \cos x\, dx =$

1. $\frac{1}{2}\left(\frac{\sin 4x}{4} + \frac{\sin 2x}{2}\right) + c$
2. $\frac{1}{2}\left(\frac{\sin 4x}{4} + \frac{\sin 4x}{2}\right) + c$
3. $\frac{1}{2}\left(\frac{\sin 4x}{4} + \frac{\sin x}{4}\right) + c$
4. $\left(\frac{\sin 4x}{2} + \frac{\sin 2x}{2}\right) + c$
5. $\left(\frac{\sin 4x}{4} + \frac{\sin 2x}{2}\right) + c$

(M.–98)